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ABSTRACT

Items from the Laurelton Self Concept Scale (LSCS) and the Locus of Control Scale for Children were administered to 172 male and female educable mental retardates to examine the LSCS by R factor analysis. It was found that the Self Concept Scale is factor analyzable when appropriately administered to educables. The small factors grouped into larger factors in ways that made psychological sense. There were independent factors for complimentary self-attitudes and for derogatory ones. The relationships between rotated solutions are explained. (RJ)

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STUDIES IN LEARNING POTENTIAL

A FACTOR ANALYSIS OF THE LAURELTON SELF-CONCEPT SCALE

By

Robert H. Harrison and Milton Budoff

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A FACTOR ANALYSIS OF THE LAURELTON SELF-CONCEPT SCALE[1]

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The Laurelton Self-Concept Scale (LSCS) was developed by Guthrie, Butler, and Gorlow (1961) to measure self attitudes of mildly to moderately retarded institutionalized adolescent girls. The 150 questions which finally constitute the scale were derived as follows. Guthrie et al. (1961) first generated 240 true-false items from a two-dimensional (6 x 5) grid for item content and a three-dimensional (2 x 2 x 2) grid for wording style. The first dimension of the content grid described type of cathexis (body, self, other) which was further broken down as follows: bo , appearance, body health, self worth, self mental health, relation to elders, relation to peers. The second dimension of the content grid referred to five types of situations in which these cathexes could be observed: work, play, school, home, generalized. The wording style grid was broken into three dimensions: favorable wording versus unfavorable; "I think" statements versus "Other people think"; and absolute statements (always, never) versus relative statements (mostly, sometimes). Preliminary screening of the 240 items reduced the number of usable items to 139. To these 139, Guthrie et al. added 11 items from the MMPI Lie Scale to make the final 150 items.

Guthrie et al. then attempted to factor analyze the 150 items by Q technique in which the intercorrelations between 50 Ss were factor analyzed by the centroid method[3]. Nine factors were extracted and rotated to orthogonal simple structure by the varimax criterion. They then correlated S's response (T or F) to each of the items with his factor loading on each of the nine person factors. These correlations were then regarded as being equivalent to R analysis factor loadings and interpreted accordingly. This procedure was repeated for a second sample of 50 Ss. Of the nine factors extracted in each analysis, seven could be named. Of the seven, however, only four could be reasonably matched across samples: Factor I^1 - IV^2 (See footnote 4), "I am good looking and make a good impression"; Factor II^1 - I^2, "I act hatefully"; Factor III^1 - V^2, "I am shy and inferior"; Factor V^1 - II^2, "I am useless and bad."[5] Subsequent work by the authors using the LSCS reflect their disappointment with the results of the factor analytic work, since they have used scores from the LSCS based on stylistic considerations alone.

With the advent of computers and factor analytic programs of larger dimensionality, it has become possible to factor analyze the entire LSCS by R technique, and thus avoid a number of thorny problems of sampling, rotation and of logical inference inherent in the small matrix Q methodology used in the initial work. An examination of the LSCS by R factor analysis was the main purpose of the present study. A second purpose was to see whether Bialer's (1961) 23 item Locus of Control Scale for Children (IE Scale) described a separate domain from that described by the LSCS by including the IE Scale items in the factor analysis.

Method

Subjects The sample consisted of 172 male and female educable mental retardates (EMRs) from one institution and several special classes in Massachusetts public schools. Forty-nine Ss, 26 male and 23 female, were tested at the Belchertown State School; twenty-one Ss, 15 male and 6 female, were tested in special classes in Brookline; thirty-two Ss, 20 male and 12 female, were from special classes in various communities in western Massachusetts; and 70 Ss, 35 male and 35 female, were from special classes in junior high schools in Boston. The mean age was 14 years, 9 months (SD 2 years, 5 months). Data on a wide range of social, demographic, and ability variables was available on many of the Ss. These data were used in making decisions about the factor analytic procedures.

Test Items 137 of the 150 items in the LSCS were modified, where necessary, so as to apply to both sexes (rather than just females) in such a way as to instruct the S to compare himself with his like-sexed peers. For example, "kids" was substituted for "girls" as the sole change for many items. Others required more changes. The remaining 13 items[6] were so feminine in content that modification made little sense and were dropped from the test. All of the 23 Bialer IE scale items were used.

Procedure The entire group of 160 items (LSCS first, then IE) was read aloud to each group of Ss, and the Ss recorded their responses on numbered answer sheets by circling a T (true) or F (false). Care was taken to make certain Ss were at the correct item. Items were re-read upon request, following administration of

the scale. Responses were coded numerically with T or Yes equal to 3; no answer equal to 2, and F or No equal to 1.

Data Analysis Pearson r was computed between every item and every other item and factor analyzed by the principal components method with 1.00 in the diagonals[7]. Fifty factors with latent roots over 1.00 were extracted, following Cooley and Lohnes' (1962) recommendations. Principal component factor scores were then computed for each S.

In order to determine the appropriate number of factors to preserve for rotation, an empirical rather than theoretical set of criteria was used. Recent reviews of factor analysis (e.g., Cliff and Hamburger, 1967) have concluded that there is no generally applicable statistical solution to this problem. The empirical approach adopted for the present purposes makes the fundamental assumption that personality variables are usually correlated with demographic, social, and ability test variables. Thus, when successive principal component factor scores cease to correlate with more than a chance number of outside social and ability variables, it is assumed that principal component scores beyond this point cease to reflect anything meaningful about the personality data. Accordingly, a correlation matrix relating 50 principal component factor scores to 56 demographic, social, and ability variables was computed, and each principal component examined for the number of correlations (against the external criteria) which were significant at the .05 and .01 levels. This data is presented in Table 1, both in simple and in cumulative form, along with an estimate of the cumulative numbers of correlations expected

to be significant by chance. A reasonable estimate, then, of the number of meaningful principal components is that point at which the difference between the obtained number of significant correlations and the chance expected number is at a maximum.

Examining Table 1, several answers to this question are apparent. Using the 5% level of significance, the first point at which the difference between the expected and observed number of correlations levels off is at 11 principal components, where approximately 15% of the 616 correlations are significant where 5% would be expected by chance, leaving a residue of 10% or 62 correlations unaccounted for by chance. The next leveling off point is at 29 components where there are 69 more significant correlations than should be expected by chance. A third possible answer is at 38 factors where there are 73 more correlations than should be expected by chance. Analagous answers to the question, using the 1% level of significance are at 9, 18, 29, and 38 factors. The two sets of data agree on 29 and 38 factors as leveling off points and have approximate agreement on the first leveling off point at around 11 principal components.

Since the principal component scores are by definition uncorrelated, another way of examining this matrix which may have advantages is to compute successive multiple Rs (1st component, 1st + 2nd component, 1st + 2nd + 3rd component, etc.) between the principal component scores and each of the demographic and ability variables. Corresponding estimates of the chance-expected multiple R, given k predictors and N subjects can be computed from the analysis of variance test for the multiple R[8]. Thus, for a given criterion variable, the number of principal components in the multiple R where the difference between the obtained multiple R

and the chance-expected multiple R is a maximum should be an index of the number of principal components required to account for that criterion variable. The data for these computations against selected criterion variables is summarized in Table 2.

Of the 38 criteria listed in Table 2, the multiple Rs of 9 are maximized by more than 38 principal components, indicating the possibility that as many as 47 principal components may be significant. If one assumes that 47 are worth preserving for rotation, only 2 of the 38 criteria are maximized by more than 47 principal component predictors. However, rotating 47 factors presents computational difficulties seldom encountered in smaller rotations,[9] and poses the likelihood of getting a number of factors encompassing only one or two significant items. This latter possibility involves interpretative difficulties as well. With this in mind, several rotations with smaller numbers of principal components were accomplished by the normal varimax criterion using 11, 29, and 38 factors.

Insert Tables 2 - 6 about here

Results

A. Principal Components Solution

Examination of Table 1 indicates that the first two principal components account for considerably more variance in the correlation matrix than any of the others (each accounts for about 7-1/2% of the total variance). The possibility that they are qualitatively different from the other components must be considered. For example, a first principal component (Spearman's G) often accounts for a disproportionate amount of the variance in intelligence test scores. Examination of the item content of the first principal component reveals that items

with a positive loading are all flattering to the respondent, while those with a negative loading are unflattering. A reasonable interpretation of this component would be that it measures the need of the respondent to put himself in a socially desirable light. All of the items have positive loadings on the second principal component (the maximum factor score on Principal Component II would be obtained by answering T to all items), suggesting that it measures acquiescence set.

Because of the dominance of these two components, parallel rotations of the first 11, 29, and 38 components were accomplished either including the first two components in the rotations or alternately excluding them. Examination of the item content and external validities of the two sets of rotations generally indicates that factors were more interpretable and more definitively correlated with outside criteria when the first two components were included in the rotations than when they were excluded. Hence the results which follow are based on the inclusion of the first two principal components in the rotated factors.

B. Rotated Solutions

Tables 3, 4, and 5 summarize the item content derived from the 11, 29, and 38 factor solutions, their correlations with social desirability (PC I) and acquiescence (PC II) and the writer's rating of his sense of confidence in the adequacy of the factor interpretation.[10,11] Generally, the interpretability of the factors was good.

C. Relationships Between Rotated Solutions

Table 6 outlines the main features of these relationships which are based on correlations between computed factor scores.

Between the 29 and 38 factor solutions there are 17 factors which share more than 50% of their variance with each other and can be regarded as essentially equivalent. These correlations are listed in the middle column of Table 6. Four more factors of the 29 factor rotation split into substantial 38 factor rotation components: 6-29, Excitable Aggressiveness, splits into a major factor (13-38, Excitable Aggressiveness) and a minor factor (29-38, Intropunitiveness). Factor 23-29, Narcissism: Looks at Home, splits into three factors: 23-38, Self-satisfaction, 33-38, Defensive Self Respect in School, and 37-38R (Reverse), Feeling Accepted at Home. Factor 25-29, Modest Self Respect, splits into two factors: 18-38, School Social Adjustment: Peers, and 32-38, Relatedness. Factor 19-29R, Athletic and Social Competence: Others' Opinion, splits into three factors: 19-38, Physical Health: Others' Opinion, 20-38, Social Competence: Others' Opinion, and 38-38R, Lack of Interpersonal Control While Physically Strong.

In three instances fairly complex regroupings of items take place between the 29 and 38 factor rotations. Factor 9-29, Easygoing Friendliness, and 29-29, Blametaking, transform into 28-38, Bitterness, and 9-38, Temper Control. Factor 11-29, Disdainful Narcissism, 12-29, Willfulness, and 18-29, Fun-loving Popularity, transform into five factors in the 38 factor rotation: 11-38, Body Narcissism, 12-38, Manipulation Through Guilt, 8-38, Social Competence with Peers, 27-38, Passive Fantasied Control, and 36-38, Mischievousness. A third set of transforms is around issues of immaturity and depression. Factor 13-29, Immature Weakness, and 28-29, Depression, transform to 6-38, Being Approved of at Home, 35-38, Lack of Easygoing Friendliness, 30-38, Tearfulness, and 34-38, Fantasy of Self Destruction.

The relationship between the 29 and 38 factor solutions and the 11 factor solution is described numerically in the left and right hand columns of correlations in Table 6. A verbal summary follows. Factor 1-11, Positive Concept of the Physical Self, combines both respondent's own ideas (1-29, 1-38) and those of others on the respondent's health, strength, and athletic competence (19-29, 19-38). Factor 2-11, Maladjustment, groups higher-order factors concerned with neuroticism (2-29, 2-38) and with acting out aggression (6-29, 13-38), and also has components concerned with poor interpersonal relationships: friendlessness, inadequacy, tearfulness. Factor 3-11, Combativeness, combines a low Lie Scale score (as a major component) with excitable aggressiveness, having friends, and having positive motivations for school. Factor 4-11, Scholastic Inadequacy, is composed of factors suggesting inadequacy (dependent inadequacy, self-abasement, physical weakness, lack of social poise, feelings of intellectual inferiority, unaggressiveness) combined with those suggesting high ambitions (positive motivation for school, inner locus of control). Factor 5-11, Narcissism, is composed of three major components: narcissism about appearance, narcissism about intellect, and the projection of fault onto others. Factor 6-11, Obedience, has as its major components an obedient, immature relationship to the home, and an inability to relate to peers in a self-assertive manner. Factor 7-11, Depression, has tearfulness and an inability to take responsibility for interpersonal relationships as major components plus a sense of despair over one's appearance but pride in intellect. Factor 8-11, Positive Motivation, has altruism as its major component plus a number of

minor components: sense of control over one's future, being approved of at home, positive motivation for school, inner locus of control, and neuroticism. Factor 9-11, Identification with Authority, breaks up differently in the two higher-order rotations, but generally into factors that suggest lack of control over one's present and future life situation, feeling rejected at home while striving to please, and being in control of one's temper. Factor 10-11, Social Adjustment at School, is composed of factors suggesting socialization: social competence with elders, social competence with peers, and having a well-controlled temper. Factor 11-11, Social Inferiority, is composed mainly of a higher-order factor of the same name plus several factors suggesting anger at self and others, and a sense of responsibility for one's interpersonal relations.

Discussion

The present study demonstrates that the Laurelton Self Concept Scale is factor analyzable when appropriately administered to an EMR population. The factors are themselves interpretable, and small factors (1-29, 1-38 rotations) group into larger factors (1-11 rotations) in ways that make psychological sense. As in the original factor analysis performed by Guthrie et al., there are independent factors for complimentary self-attitudes and for derogatory ones. Saying "True" to a number of complimentary statements does not imply, in this population, saying "False" to self-derogatory ones.

A number of the replicated factors from the Guthrie et al.

analysis appear to have equivalents in the 11 factor rotation. Guthrie et al.'s I^1-IV^2, "I am good looking and make a good impression," appears to be conceptually close to the present 5-11, Narcissism. Factor II^1-I^2 of Guthrie et al., "I act hatefully," can be compared to the excitable-aggressive component of 2-11, Maladjustment. Guthrie's "I am shy and inferior" (III^1-V^2) and his "I am useless and bad" (V^1-II^2) can both be identified with 11-11, Social Inferiority, from the present analysis. Curiously enough, the first factor from the present analysis (Positive Concept of the Physical Self), which accounts for the largest percentage of the variance, does not clearly emerge in the Guthrie et al. analysis. The fact that boys were included in the present sample and that most of the children were in a more competitive situation by virtue of not being institutionalized may have something to do with the importance of this first factor in the present sample of predominantly community based special class EMRs.

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Footnotes

1. The research described was made possible by support of grants 10588 from the National Institute of Mental Health and 80506 from the Division of Research, Bureau of the Handicapped, Office of Education, U. S. Department of Health, Education and Welfare.

2. 12 Maple Avenue, Cambridge, Massachusetts, 02139.

3. Q technique was used because of the restricted dimensionality of extant factor analytic programs and computer systems.

4. Exponents refer to factors in the first sample of 50 Ss(^{1}) versus factors found in the second sample of 50 Ss(^{2}).

5. Guthrie et al. also match their factors IV^1 with III^2. Inspection of the factor loadings reveals that the match is not appropriate: none of the five highest-loading items in IV^1 is among the five highest-loading items in III^2.

6. Items 11, 26, 57, 58, 59, 86, 101, 141, 145, 147, 148, 149, 150 were dropped from the original LSCS.

7. Comrey and Levonian (1958) have shown empirically that factor-analytic results are highly similar whether the coefficient of correlation is phi (2 x 2 Pearson r) or the tetrachoric correlation coefficient. Hence the decision to use Pearson r for the present 3 x 3 tables.

8. This estimate of the chance-expected multiple R^2 assumes that one degree of freedom will account for the same percentage of the total variance in the criterion variable whether it is assigned to the predictor (numerator) or error (denominator) side of the

F ratio equation. Thus, the chance-expected multiple R^2 for two predictors should be equal to 2/total df.

9. Even in the 29 and 38 factor rotations criteria for stopping iterative procedures had to be relaxed to prevent the computations from being stalled indefinitely by fine differences in rotational angles.

10. E = excellent, G = good, F = fair, P = poor.

11. Lists of the specific items in each factor having loadings above .245 may be obtained from the authors.

Table 1

Expected and Observed Numbers of Significant (.05, .01) Correlations Between 56 Criterion Variables and Each Successive Principal Component

Component	Observed		Cumulative Observed		Cumulative Expected		Cumulative Difference (O-E)		Latent Root	Difference
	.05	.01	.05	.01	.05	.01	.05	.01		
1	9	6	9	6	2.8	.56	6.2	5.5	12.63	1.39
2	14	9	23	15	5.6	1.12	17.4	13.9	11.24	5.55
3	17	9	40	24	8.4	1.68	31.6	22.3	5.69	.66
4	6	4	46	28	11.2	2.24	34.8	25.8	5.03	1.04
5	10	5	56	33	14.0	2.80	42.0	30.2	3.99	.43
6	2	0	58	33	16.8	3.36	41.2	29.6	3.56	.11
7	8	2	66	35	19.6	3.92	46.4	31.1	3.45	.35
8	5	1	71	36	22.4	4.48	48.6	31.5	3.10	.11
9	7	3	78	39	25.2	5.04	52.8	34.0	2.99	.17
10	5	0	83	39	28.0	5.60	55.0	33.4	2 82	.05
11	10	1	93	40	30.8	6.16	62.2	33.8	2.77	.23
12	2	1	95	41	33.6	6.72	61.4	34.3	2.54	.04
13	2	0	97	41	36.4	7.28	60.6	33.7	2.50	.02
14	1	1	98	42	39.2	7.84	58.8	34.2	2.48	.14
15	3	2	101	44	42.0	8.40	59.0	35.6	2.34	.02
16	3	3	104	47	44.8	8.96	59.2	38.0	2.32	.08
17	4	3	108	50	47.6	9.52	60.4	40.5	2.24	.05
18	2	1	110	51	50.4	10.08	59.6	40.9	2.19	.06
19	5	0	115	51	53.2	10.64	61.8	40.4	2.13	.10
20	1	0	116	51	56.0	11.20	60.0	39.8	2.03	.01
21	0	0	116	51	58.8	11.76	57.2	39.2	2.02	.07
22	2	1	118	52	61.6	12.32	56.4	39.7	1.95	.00
23	4	0	122	52	64.4	12.88	57.6	39.1	1.95	.02
24	2	0	124	52	67.2	13.44	56.8	38.6	1.93	.08
25	8	5	132	57	70.0	14.00	62.0	43.0	1.85	.05
26	4	0	136	57	72.8	14.56	63.2	42.4	1.80	.04
27	6	2	142	59	75.6	15.12	66.4	43.9	1.76	.04
28	3	0	145	59	78.4	15.68	66.6	43.3	1.72	.03
29	5	2	150	61	81.2	16.24	68.8	44.8	1.69	.02
30	1	0	151	61	84.0	16.80	67.0	44.2	1.67	.05
31	1	0	152	61	86.8	17.36	65.2	43.6	1.62	.04
32	4	2	156	63	89.6	17.92	66.4	45.1	1.58	.01
33	4	0	160	63	92.4	18.48	67.6	44.5	1.57	.06
34	3	0	163	63	95.2	19.04	67.8	44.0	1.51	.01
35	1	0	164	63	98.0	19.60	66.0	43.4	1.50	.04
36	1	0	165	63	100.8	20.16	64.2	42.8	1.46	.02
37	3	0	168	63	103.6	20.72	64.4	42.3	1.44	.02
38	11	5	179	68	106.4	21.28	72.6	46.7	1.42	.06
39	3	0	182	68	109.2	21.84	72.8	46.2	1.36	.03
40	2	0	184	68	112.0	22.40	72.0	45.6	1.33	.03
41	0	0	184	68	114.8	22.96	69.2	45.0	1.30	.03
42	2	0	186	68	117.6	23.52	68.4	44.5	1.27	.03
43	3	0	189	68	120.4	24.08	68.6	43.9	1.24	.04
44	2	0	191	68	123.2	24.64	67.8	43.4	1.20	.03
45	1	0	192	68	126.0	25.20	66.0	42.8	1.17	.02
46	6	0	198	68	128.8	25.76	69.2	42.2	1.15	.01
47	3	0	201	68	131.6	26.32	69.4	41.7	1.14	.03
48	4	1	205	69	134.4	26.88	70.6	42.1	1.11	.02
49	0	0	205	69	137.2	27.44	67.8	41.6	1.09	.01
50	1	0	206	69	140.0	28.00	66.0	41.0	1.08	.01

Table 2

Number of Principal Components Required to Maximize a Chance-Corrected Multiple Correlation with Selected Demographic and Ability Criteria

Criterion	N	R^2 Max O-E	No. components	Significant Single Components 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Age, 1st Kohs	172	.0884	20	38	4	11	46	42	10				
Age, Ravens	151	.1816	29	4	38	46	11	27	10	7			
Sex	172	.2702	34	3	5	34	11	9					
Race	172	.2929	38	5	3	27	1	44					
Socio-Econ. Status	100	.343	48	11	42	31							
No. Sibs	109	.1123	36	9	10	28							
No. Older Sibs	87	.0054	4										
No. Younger Sibs	87	.1822	28	18	9	10	26						
Family Intactness	160	.3612	15	2	13	6	3	47	12	11	4	1	5
Father's Situation	140	.0835	48	37	24	47	45						
Mother's Situation	143	.1231	47	15	24	11	47	43					
Remoteness of Birthplace	69	.1146	44	37	19								
Yrs. North. City	60	.0019	6										
Moves/Yr.	57	.1365	30	25	29	30							
Mother's English	54	.1585	18	16									
Father's English	47	.1129	17	16									
Age Entered Special Class	114	.2355	35	27	7	11	26	35					
Yrs. in Special Class	114	.0984	43	5	8	27	38						
Epilepsy Present	69	.0600	18	3									
Brain Injury	93	.4472	40	29	3	17	22	13	23	7			
No. Illnesses	66	.1882	46	27	15								
No. Major Operations	92	.0613	5	48	2	28							
Attendance K-1 Yr.	26	.5245	26	25	5	3	38						
Attendance Previous	39	.1449	39	25	3	39	19						
Attendance 2 Yr. Previous	51	.3738	34	25	19	34	46	3					
1st Kohs Score(K_1)	169	.1391	9	2	5	38	1						
2nd Kohs Score(K_2)	160	.0915	14	1	2	5							
$K_2 - K_1$	160	.0150	35	29									
3rd Kohs Score(K_3)	73	.2281	6	2	5	25	36						
Ravens Raw Score	151	.1111	5	2	3								
Ravens Percentile	88	.1429	29	2	16								
Most Recent I.Q.	168	.2404	5	3	2	1	4						
Next Previous I.Q.	128	.1992	8	3	2	1	48						
3rd Previous I.Q.	40	.3529	18	3	17								
Last Verbal I.Q.	64	.1601	22	6	20	18	38	22					
Last Perform. I.Q.	64	.1330	27	5									
Reading Score	36	.0000	0	38	46								
Math Score	57	.3812	40	2	40	27	26	34					

Table 3

The Eleven Factor Solution

	Conf.[a]	rPCI[b]	rPCII[c]
1-11 Positive Concept of the Physical Self The 36 items (35 keyed T) included in this factor describe, in fairly even proportions, positive feelings about health, physical prowess, and physical attractiveness. The self is described as being "as good as" others rather than being better than others.	E	+73	+18
2-11 Maladjustment The 44 items (43 keyed T) included in this factor describe a person who is intrapersonally and interpersonally conflicted and anxious, a person who fights with himself and with others, who is upset and scared.	E	-38	+71
3-11 Combativeness The 24 items in this factor (17 keyed T) divide into two groups: those keyed T describe a person who is intrusive and aggressive; those keyed F are mostly from the MMPI Lie scale.	E	-12	+10
4-11 Scholastic Inadequacy The 16 items in this factor (9 keyed T) describe a person who admits his need for help in the school situation, feels uncomfortable with older people, but relatively happy with peers at school.	G	-04	+06
5-11 Narcissism The 21 items (all keyed T) on this factor describe a person who thinks well of his looks and intellect to the point of feeling he is better than others, and projecting blame onto others.	E	+23	+25
6-11 Obedience The 18 items in this factor (9 keyed T) describe a person who is obedient, interpersonally unassertive, and isolated from peers. 11 of the 18 items start with some variant of "Others think that..."	G	+04	00
7-11 Depression The 13 items in this factor (7 keyed T) describe a person who cries a lot, who feels hopeless about his schoolwork, his looks, and his future.	E	-11	+06
8-11 Positive Motivation The 28 items in this factor (25 keyed T) describe a person who is trying to do his best to behave well, to look well, and to please others.	E	+40	+18
9-11 Identification with Authority The 16 items in this factor (12 keyed T) describe a person who is obedient to the point of feeling that he has no voice in family decision making, and keeps his impulses towards autonomy firmly in check.	G	+14	+10

Table 3 (Cont'd)

	Conf.	rPCI	rPCII
10-11 Social Adjustment at School The 21 items in this factor (all keyed T) describe a person who gets along easily with older people in school and at home and gets along well with peers at school.	E	+20	+37
11-11 Social Inferiority The 28 items in this factor (all keyed T) describe feelings that others are better than the self. In contrast with items in Factor 5-11, the grammatical subject is "Others" in most items.	E	-10	+46

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[a] This is the writer's rating of his confidence in the adequacy of the factor label.

[b] The figures in this column refer to the correlation between each rotated factor and the first principal component factor (PCI). PCI was interpreted as a social desirability factor.

[c] The figures in this column refer to the correlation between each rotated factor and the second principal component factor score PCII. PCII was interpreted as a measure of acquiescence set.

Table 4

The Twenty-Nine Factor Solution

	Conf.[a]	rPCI[b]	rPCII[c]
1-29 Positive Concept of the Physical Self (32 items, 30 T) These items describe positive feelings about health, physical prowess, and physical attractiveness. The self is described as being "as good as" others. 15 of the items start with "Others think..."	E	+67	+18
2-29 Neuroticism (18 items, 18 T) These items describe a person who is indecisive, easily hurt, interpersonally inept, and anxious.	E	-18	+37
3-29 Social Desirability Lie Scale (18 items, 11 T) These items present the S in an excessively favorable light (e.g., "I am always good"). Many are from the MMPI lie scale.	E	+18	+14
4-29 Altruism: Positive Motivation (16 items, 16 T) These items describe a person who tries hard, sticks up for people in trouble and looks morally good to adults.	E	+30	+12
5-29 Getting Ahead (8 items, 5 T) These items describe a person who feels that he is lucky and is doing well in his work.	F	+08	+10
6-29 Excitable Aggressiveness (23 items, 21 T) These items describe a person who is easily angered and gets into fights, is excitable and intrusive.	E	-31	+43
7-29 Social Inferiority (22 items, 22 T) These items describe feelings that "other people" (the grammatical subject) are better than the self: they look better, they dress better, they think that the respondent could be better behaved.	E	-13	+41
8-29 Responsibility for Interpersonal Behavior (8 items, 6 T) These items express the respondent's confidence in his ability to manipulate people often through knowledge of what is socially appropriate.	G	+12	+08
9-29 Easygoing Friendliness: Adults (7 items, 7 T) These items describe a person who is pleasing, passive, easy to get along with, and controls his temper.	G	+17	+05
10-29 Social Competence with Elders (10 items, 10 T) These items reflect a sense of ease in relating to elders and in working at school where elders are dominant.	E	+18	+21

Table 4 (Cont'd)

	Conf.	rPCI	rPCII
11-29 Disdainful Narcissism: Looks (14 items, 13 T) These items describe a person who thinks well of his looks, feels he is better than others, and projects blame for his own difficulties onto others.	E	+18	+17
12-29 Willfulness (13 items, 11 T) These items describe a person who is used to getting his own way and manipulating people in a rather high-handed way.	E	-01	+16
13-29 Immature Weakness (8 items, 5 T) These items describe a child who is a crybaby, afraid to compete physically with peers, obedient but not well liked at home.	G	-01	+10
14-29 Future Control (9 items, 7 T) The two items with high loadings on this scale express the belief that a child can be what he wants to be when he grows up. The other items are largely statements of positive motivation and intent.	G	+03	+11
15-29 Sheltered Optimism (7 items, 5 T) The two highest loading items express optimism about the future and a smug sense of understanding people's motives. The other items reflect ease with elders and difficulty with peers.	F	+02	+05
16-29 Bravado, Fears of Rejection (6 items, 3 T) The item with a high loading expresses ease in reading aloud in class. Several other items express despair over the respondent's social acceptibility.	P	00	+01
17-29 Insensitivity to Disapproval (8 items, 4 T) These items describe a person who is fairly insensitive to moral and social opinions of others, admits the consequent unpopularity, and is seeking more human contact.	F	-06	+08
18-29 Fun-loving Popularity (12 items, 12 T) The person described by these items is popular, has many friends, and enjoys being mischievous and silly.	E	+14	+18
19-29 Athletic and Social Incompetence: Other's Opinion (14 items, 9 T) These items refer negatively to the respondent's physical prowess and social competence. 8 of the items start with "Others think..."	G	-22	+24
20-29 Depressed Self Criticism (8 items, 7 T) These items describe a person who feels depressed and is excessively burdened by his sense of responsibility.	F	00	+21

Table 4 (Cont'd)

	Conf.	rPCI	rPCII
21-29 Dependent Inadequacy (9 items, 7 T) These items describe a person who acutely feels helpless, weak, and who is seeking help.	E	-06	+20
22-29 Narcissism: Intellect (6 items, 5 T) These items describe a person who feels intellectually competent.	E	+13	+11
23-29 Narcissism: Looks at Home (5 items, 3 T) These items express a prim sense of confidence that the respondent's looks and manners are appreciated at home.	E	+12	+01
24-29 Positive School Motivation (11 items, 10 T) The two items with the highest loadings express the wish to get high grades and the perception of oneself as honest. Most of the other items reinforce the impression of honesty, a few are around the need to do well.	G	+14	+13
25-29 Modest Self Respect (5 items, 3 T) These items describe a person who feels important but not superior to others and respects their opinions.	G	+09	-05
26-29 Inner Locus of Control (12 items, 9 T) These items express a sense of being able to change adverse situations, and of taking responsibility for mistakes. 6 of the items are from the Bialer scale.	G	+16	+06
27-29 Friendlessness (5 items, 4 T) These items describe a person who has few friends and is not friendly himself.	G	-05	-13
28-29 Depression (9 items, 8 T) The person who scores high on this factor is depressed about his looks, wishes he were dead, and feels that life is very difficult.	G	-05	+14
29-29 Blame Taking (12 items, 11 T) These items describe a person who says that life is difficult, that he can barely cope, and that misfortunes are his fault.	F	-04	+21

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a, b, c See footnotes for Table 3.

Table 5

The Thirty-Eight Factor Rotation

	Conf.[a]	rPCI[b]	rPCII[c]
1-38 Positive Concept of the Physical Self The 26 items in this factor (24 keyed T) convey a sense of being as physically competent, strong, healthy, and good looking as peers. Stylistically the items split fairly evenly between "Other think" statements (11) and "I think" statements (15).	E	+64	+17
2-38 Neuroticism (18 items, 18 T) These items describe a person who is indecisive, emotionally vulnerable to the entire range of negative feelings, and interpersonally inept.	E	-15	+42
3-38 Social Desirability Lie Scale (15 items, 9 T) These items present S in an excessively favorable light (e.g., "I am always good"). Many are from the MMPI lie scale.	E	+18	+15
4-38 Altruism: Positive Motivation (15 items, 14 T) These items describe a person who tries hard, is concerned about people in trouble, and feels his family approves of him.	E	+26	+14
5-38 Self-Abasement (7 items, 4 T) A person who scores high on this factor is running himself down, on all of the items.	F	-04	-05
6-38 Being Approved of at Home (8 items, 7 T) These items suggest a person who is quite concerned about, and successful in, getting family approval.	G	+11	+06
7-38 Social Inferiority (15 items, 15 T) These items describe a person who feels that other people are better looking and more socially competent than the self. 12 of the 15 items do not have "I" as the grammatical subject.	E	-12	+35
8-38 Social Competence with Peers (11 items, 11 T) These items describe a person who can get people to do things for him, is full of fun, and has many friends in school.	G	+14	+18
9-38 Temper Control (4 items, 3 T) The two items with the highest loadings on this factor refer directly to ability to control one's temper. The other two items refer to ease at doing schoolwork and at playing sports. Three of the four items start with "Others think".	G	+12	+14
10-38 Social Competence with Elders (11 items, 11 T) These items describe a person who gets along easily with older people and feels rewarded by them, particularly in school.	E	+15	+18

Table 5 (Cont'd)

	Conf.	rPCI	rPCII
11-38 Body Narcissism (10 items, 8 T) These items describe a person who thinks he is good looking, feels well liked, and rejects any identification with people in trouble.	E	+15	+13
12-38 Manipulation Through Guilt (7 items, 7 T) These items describe a person who is capable of projecting blame and capitalizing on other people's guilt feelings.	G	-04	+18
13-38 Excitable Aggressiveness (20 items, 18 T) These items describe a person who is easily angered and easily upset.	E	-24	+32
14-38 Future Control (2 items, 2 T) Both of these items express the feeling that one can be whatever one wants to be when one grows up.	E	+01	+10
15-38 Sheltered Optimism (7 items, 6 T) These items describe a person who is optimistic, smug, and who sticks very close to home.	G	+03	+07
16-38 Bravado (2 items, 2 T) The items with the highest loading expresses self-confident reading in class; the second expresses superiority to others.	F	00	+04
17-38 Positive School Motivation (8 items, 7 T) The items with high loadings express high ambition in school and honesty. Some of the items with lower loadings express strong control over anger.	G	+19	+11
18-38 School Social Adjustment: Peers (8 items, 5 T) These items describe a person who feels well liked by his peers but not by his elders.	G	+04	00
19-38 Physical Health: Others' Opinion (10 items, 8 T) All of these items relate to good physical health or its implications for sports;seven of the ten items start with some form of "Others think..."	E	+21	-04
20-38 Social Competence: Others' Opinion (9 items, 6 T) Six of these items indicate that others think that the respondent is socially competent and well liked.	G	+16	-01
21-38 Dependent Inadequacy (8 items, 7 T) These items describe a person who acutely feels his helplessness and weakness, particularly in school.	E	-09	+20
22-38 Narcissism: Intellect (8 items, 8 T) These items describe a person who thinks well of his intellectual ability.	E	+14	+15
23-38 Self-Satisfaction (6 items, 4 T) These items describe an obedient, unaggressive, unrebellious child who seems pretty satisfied with his situation.	P	+14	-01

Table 5 (Cont'd)

	Conf.	rPCI	rPCII
24-38 Friendlessness (7 items, 7 T) These items describe a person who has few friends and has a hard time making friends.	E	-02	+14
25-38 Responsibility for Interpersonal Behavior (8 items, 5 T) These items describe a person who has a realistic sense of control over his interpersonal relationships and takes responsibility for them.	G	+10	+08
26-38 Inner Locus of Control (11 items, 9 T) These items convey a sense of being able to change adverse situations. Three of the items are on the Bialer scale.	G	+19	+06
27-38 Passive, Fantasied Control (5 items, 3 T) The person who scores high on this factor has the fantasy that he can influence the course of his life but reports that in fact he has very little influence.	G	-04	+06
28-38 Bitterness (11 items, 10 T) These items describe a person who is angry at himself and angry with others.	G	-01	+07
29-38 Intropunitiveness (10 items, 9 T) A person scoring high on this factor blames himself for most of the common human faults. The highest loading item, "It's my fault when something goes wrong" summarizes the meaning of the factor.	E	-14	+26
30-38 Tearfulness (9 items, 8 T) These items describe a person who is easily brought to crying in front of his peers and is generally unhappy.	E	-14	+24
31-38 Depressed Alienation (4 items, 3 T) These items describe a person who is unfriendly and depressed.	F	-04	+16
32-38 Unrelatedness (4 items, 3 T) These items describe a person who keeps people at a distance and in turn feels left out.	F	-06	+09
33-38 Defensive Self-Respect in School (7 items, 5 T) The person who scores high on this factor claims academic superiority to peers while at the same time feeling disliked by his teachers.	G	+11	+05
34-38 Fantasy of Self Destruction (5 items, 4 T) These items describe a person who rejects his identity to the point of wishing to be dead, wishing to be someone else, and feeling ashamed of himself.	G	+07	+12
35-38 Easygoing Friendliness (4 items, 4 T) These items describe a person who is sociable, easygoing and lazy.	G	+16	+06

Table 5 (Cont'd)

	Conf.	rPCI	rPCII
36-38 Mischievousness (10 items, 10 T) These items describe a child who is mildly misbehaved, hyperactive, and sociable.	G	00	+17
37-38 Feeling Rejected at Home (3 items, 2 T) The primary focus of these three items is on feeling rejected by the family because of bad looks and careless dress. Seven additional items whose loadings just miss the arbitrary criterion (.245) for inclusion express feelings of depression and sullen rebellion.	G	-06	+18
38-38 Fantasy of Control While Weak (8 items, 8 T) Two themes are expressed equally often in these items: the fantasy of controlling one's present and future and the report of feeling physically weaker than other children.	F	00	+17

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a, b, c See footnotes for Table 3.

Table 6

Summary of the Factor Structure from 3 Rotations

11-29		29 Factor Rotation	29-38		38 Factor Rotation	11-38
		1-11 Positive Concept of Physical Self				
+822	1-29	Physical Competence: Own Opinion	+946	1	Physical Competence: Own Opinion	+827
+247	19R	Athletic & Social Competence: Others Opinion	+549	19	Physical Health: Others Opinion	+353
		2-11 Maladjustment				
+563	2	Neuroticism	+866	2	Neuroticism	+551
+666	6	Excitable Aggressiveness	+840	13	Excitable Aggressiveness	+519
		" "	+357	29	Self Hatred	+317
+243	27	Friendlessness	+794	24	Friendlessness	+254
+224	21	Dependent Inadequacy	+872	21	Dependent Inadequacy	+234
				30	Tearfulness	+246
		3-11 Combativeness				
-785	3	Social Desirability Lie Scale	+880	3	Social Desirability Lie Scale	-688
+260	24	Positive School Motivation	+793	17	Positive School Motivation	+201
-300	27	Friendlessness	+794	24	Friendlessness	-252
+245	6	Excitable Aggressiveness	+840	13	Excitable Aggressiveness	+329
		4-11 Scholastic Inadequacy				
+467	21	Dependent Inadequacy	+872	21	Dependent Inadequacy	+440
+312	5R	Not Getting Ahead	+872	5	Self Abasement	+357
+385	19	Athletic & Social Incompetence: Others Opinion	+469	38	Fantasy of Control While Weak	+225
+309	26	Inner Locus of Control	+843	26	Inner Locus of Control	+214
-238	16	Bravado: Fear of Rejection	+703	16	Bravado: Fear of Rejection	-235
-295	22	Narcissism: Intellect	+922	22	Narcissism: Intellect	-232
-270	6	Excitable Aggressiveness	+840	13	Excitable Aggressiveness	-206
+234	24	Positive School Motivation	+793	17	Positive School Motivation	+203
				20	Social Competence: Others Opinion	-216
				33	Defensive Self Respect in school	-262

Table 6 (Cont'd)

11-29		29 Factor Rotation	29-38		38 Factor Rotation	11-38
			5-11 Narcissism			
+700	11	Disdainful Narcissism	+674	11	Body Narcissism	+392
		" "	+477	12	Manipulation Through Guilt	+379
+328	22	Narcissism: Intellect	+922	22	Narcissism: Intellect	+445
+225	15	Sheltered Optimism	+829	15	Sheltered Optimism	+256
-293	19R	Athletic & Social Competence: Others Opinion	+366	20	Social Competence: Others Opinion	-204
-230	26	Inner Locus of Control	+843	26	Inner Locus of Control	-221
-246	29	Blame Taking		3	Social Desirability Lie Scale	+220
				36	Mischeviousness	+217
			6-11 Obedience			
+594	13	Immature Weakness	+672	6	Being Approved at Home	+470
		" "	-431	35	Easygoing Friendliness	-315
		" "	+491	30	Tearfulness	+226
-381	18	Fun Loving Popularity	+636	36	Mischeviousness	-396
+288	8	Responsibility for Interpersonal Behavior	+776	25	Responsibility for Interpersonal Behavior	+229
+259	5	Getting Ahead	-872	5	Self Abasement	-200
-251	6	Excitable Aggressiveness		19	Physical Health: Others Opinion	-210
-218	16	Bravado: Fear of Rejection		32	Unrelatedness	+206
+234	22	Narcissism: Intellect				
			7-11 Depression			
-505	8	Responsibility for Interpersonal Behavior	+776	25	Responsibility for Interpersonal Behavior	-303
		" "	+278	30	Tearfulness	+575
+339	28	Depression	+542		" "	
+308	3	Social Desirability Lie Scale	+880	3	Social Desirability Lie Scale	+224
+270	22	Narcissism: Intellect	+922	22	Narcissism: Intellect	+268
-268	11	Disdainful Narcissism: Looks	+674	11	Body Narcissism	-297
+200	12	Willfulness		19	Physical Health: Others Opinion	+251
+262	17	Insensitivity to Disapproval				
-213	27	Friendlessness				
			8-11 Positive Motivation			
+699	4	Altruism: Positive Motivation	+869	4	Altruism: Positive Motivation	+650
+341	14	Future Control	+762	14	Future Control	+250
+233	2	Neuroticism	+866	2	Neuroticism	+249
+256	23	Narcissism: Looks at Home	+482	23	Self Satisfaction	+344

Table 6 (Cont'd)

11-29		29 Factor Rotation	29-38		38 Factor Rotation	11-38
		8-11 Positive Motivation				
+248	24	Positive School Motivation	+793	17	Positive School Motivation	+266
+248	26	Inner Locus of Control	+843	26	Inner Locus of Control	+245
		9-11 Identification with Authority				
+399	20	Depressed Self Criticism	+342	37	Feeling Rejected at Home	+270
+323	29	Blame Taking	+658	9	Temper Control	+460
+394	9	Easygoing Friendliness: Adults	+414		" "	
		" "	+381	28	Bitterness	+278
-330	14	Future Control	+762	14	Future Control	-346
-351	12	Willfulness				
+203	10	Social Competence With Elders	+911	10	Social Competence With Elders	+245
+205	3	Social Desirability Lie Scale	+880	3	Social Desirability Lie Scale	+274
+247	24	Positive School Motivation		19	Physical Health: Others Opinion	+232
		10-11 Social Adjustment at School				
+645	10	Social Competence With Elders	+911	10	Social Competence With Elders	+585
+412	29	Blame Taking	+658	9	Temper Control	+260
+289	18	Fun Loving Popularity	+546	8	Social Competence: Peers	+354
+296	12	Willfulness	+445		" "	
		" "	+397	27	Passive-Fantasied Control	+214
				19	Physical Health: Others Opinion	-235
				30	Tearfulness	+262
				38	Fantasy of Control While Weak	+249
		11-11 Social Inferiority				
+776	7	Social Inferiority	+915	7	Social Inferiority	+719
+285	8	Responsibility for Interpersonal Behavior	+776	25	Responsibility for Interpersonal Behavior	+261
+202	28	Depression	+523	34	Fantasy of Self Rejection	+211
				12	Manipulation thru Guilt	+241
				31	Depressed Alienation	+301
		No Connection with 11 Factor Rotation				
	25	Modest Self Respect		18	School Social Adjustment: Peers	